



Superior KÜHME seat tightness

Absolute seat tightness through high performance seat sealing systems ensuring leakage rate A as per EN 12266-1

To comply with international safety standards established for most challenging applications KÜHME shut-off valves are developed to ensure absolute reliability in regards to seat tightness. Zero leakage and absolute tightness has been implemented as an internal KÜHME standard way before respective rules have been aligned which is underlining the company's high conscientiousness involving the supply for safety shut-off equipment.

As per today the safety quick-closing shut-off valve range for combustible media - whether gaseous or liquid fuel - are type approved through independent as well as accredited notified body (e.g. TÜV Rheinland). The respective test procedures for seat tightness are subject to EN 12266-1 and requirement to comply with leakage rate A which has to be fulfilled over complete span of the type test procedure.

Furthermore each valve produced in KÜHME works is individually tested as per EN 12266-1 ensuring seat leakage class A. As leakage rate A as per EN 12266-1 allows no detectable leakage the performance is better as per comparable standard ANSI/FCI 70-2 and leakage class VI which still allows a certain leakage depending on the seat diameter. The same is highlighted in the comparison of both standards below:



EN 12266-1 Seat Leakage Classifications							
Test fluid	Rate A	Rate B	Rate C	Rate D	Rate E	Rate F	Rate G
Liquid	No visually detectable leakage for the duration of the test	0,01 x DN	0,03 x DN	0,1 x DN	0,3 x DN	1,0 x DN	2,0 x DN
Gas		0,3 x DN	3,0 x DN	30 x DN	300 x DN	3.000 x DN	6.000 x DN
NOTE 1 The leakage rates only apply when discharging to room temperature.							
NOTE 2 Table A.1 shall be used to establish the equivalent DN number for those valves which are designated other than by DN.							
NOTE 3 "No visually detectable leakage" means no visible weeping or formation of drops or bubbles. If leakage rate measurements are carried out by automatic means, this should be qualified by the manufacturer's quality system.							

ANSI/FCI 70-2 Seat Leakage Classifications						
Leak. class:	VI	V	IV	III	II	I
Maximum leakage allowable	Not to exceed amounts shown in the table below	0,0005 ml per minute of water per inch of port diameter per psi differential	0,01% of rated capacity	0,1% of rated capacity	0,5% of rated capacity	N/A (No test required)
Test medium	Air or Nitrogen at 50 to 125°F (10 to 52°C)	Water at 50 to 125°F (10 to 52°C)	Air or water at 50 to 125°F (10 to 52°C)	Air or water at 50 to 125°F (10 to 52°C)	Air or water at 50 to 125°F (10 to 52°C)	N/A (No test required)

safe and reliable



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Class VI - valve leakage classifications:			
Port diameter		Bubbles per minute	ml per minute
Inches	Millimeters		
1	25	1	0,15
1 ½	38	2	0,30
2	51	3	0,45
2 ½	64	4	0,60
3	76	6	0,90
4	102	11	1,70
6	152	27	4,00
8	203	45	6,75
10	254	63	9,00
12	305	81	11,50

Notes:

- The test fluid is air or nitrogen.
- Pressure is the lesser of 50 psig or operating pressure.
- The leakage limit depends on valve size and ranges from 0.15 to 6.75 ml per minute for valve sizes through 8 inches.